

# Aerial Yellow-billed Loon Surveys in Cape Krusenstern National Monument and Bering Land Bridge National Preserve, Alaska

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In 2009, the Arctic Network of the NPS Inventory and Monitoring Program implemented a pilot study to test methods for aerial surveys of yellow-billed loons (*Gavia adamsii*) in Bering Land Bridge National Preserve and Cape Krusenstern National Monument. The breeding range of yellow-billed loons is restricted to large lakes (>7 hectares) (North and Ryan 1989) in the Arctic coastal plain of Alaska and in western Alaska on the Seward Peninsula. Population estimates for the loons in Bering Land Bridge and Cape Krusenstern represent about 20% of the U.S. population (Schmutz 2008).

We flew an occupancy survey in June to count adults and nests, and a productivity survey in late August to count members of family groups. Each survey covered the same 24 plots distributed among the two park units. Staff from NPS conducted the surveys in accordance with training and protocols designed specifically for these loons by U.S. Fish and Wildlife Service (Mallek et al. 2005, Bollinger et al. 2007). A total of 186 adults and 14 nests were counted on the plots in 2009.

The yellow-billed loon was selected by the Arctic Network as a “vital sign” for long-term monitoring. These loons return to the same breeding sites each year, making them ideal for monitoring long-term population

trends. As top predators in lake ecosystems, they may be indicators of water quality and provide insight into the movement of marine-derived nutrients and shifts in riparian or coastal communities. In addition, as long-lived piscivores (fish-eaters) yellow-billed loons can bio-accumulate contaminant loads (i.e. mercury, PCPs) (Schmutz 2008) and may serve as contaminant indicators. Contaminants are of particular concern because both the loons and their eggs may be harvested for human subsistence.



**Figure 1.** Pilot Eric Sieh flies the edge of a lake in Bering Land Bridge while looking for yellow-billed loons and their nests.

## REFERENCES

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